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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/826,108	04/04/2001	Andrew C. Gallagher	82248DMW	2750

7590 07/29/2004

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EXAMINER	
LONG, HEATHER R	

ART UNIT	PAPER NUMBER
2615	

DATE MAILED: 07/29/2004

3

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/826,108	GALLAGHER, ANDREW C.	
	Examiner	Art Unit	
	Heather R Long	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 April 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-9 and 13-18* is/are rejected.

7)☒ Claim(s) *6 and 10-12* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 April 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2 / 04-04-2001*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5, 7-9, 13, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamashita (U.S. Patent 5,343,302).

Regarding claim **1**, Yamashita discloses in Fig. 1 an image processing method for compensating for light falloff in a digital image, the method comprising the steps of: providing an input digital image comprised of image pixels (it is inherent that the CCDs (2, 3, 4) comprises a plurality of individual pixels); providing individual compensation values to correct light falloff in one or more of the image pixels (col. 4, lines 24-46), whereby the individual compensation values induce a balance change in the digital image (col. 4, lines 24-27); determining a balance value for correcting the balance change of the digital image (col. 4, lines 24-27); and applying the individual compensation values and the balance value to one or more pixels of the input digital image to provide a corrected image having compensation for light falloff with minimal change to the light balance (col. 3, lines 15-22).

Regarding claim **2**, Yamashita discloses in Fig. 2 a method for compensating for light falloff in a digital image wherein the step of providing individual compensation values comprises the steps of: providing falloff compensation information which varies depending on location within the digital image (It is inherent from Fig. 2 that the falloff compensation information varies depending on location within the digital image as can be seen by the horizontal axis representing distance from the image center and the parabolic wave signal representing different compensation values that change according to how far the pixel is located from the center of the image.); and using the falloff compensation information to generate individual compensation values for one or more pixels (as can be seen from Fig. 2 depending on the distance the pixel is from the center of the image will determine the falloff compensation needed for that pixel).

Regarding claim **3**, Yamashita discloses a method for compensating for light falloff in a digital image wherein the step of providing individual compensation values comprises the steps of: providing a falloff compensation mask which varies depending on location within the digital image (It is inherent from Fig. 2 that Fig. 2 is a two-dimensional image and if Fig. 2 would be displayed as a three-dimensional image a compensation mask would be the result.); and using the falloff compensation mask to generate individual compensation values for one or more pixels (As can be seen from Fig. 2 depending on the

distance the pixel is from the center of the image will determine the falloff compensation needed for that pixel, the same would be true if a mask were displayed instead.).

Regarding claim **4**, Yamashita discloses a method for compensating for light falloff in a digital image wherein the step of determining a balance value uses the falloff compensation information to determine a balance value (col. 2, lines 47-49).

Regarding claim **5**, Yamashita discloses a method for compensating for light falloff in a digital image wherein the step of determining a balance value uses the falloff compensation mask to determine a balance value (col. 2, lines 47-49) (the compensation mask would be the three-dimensional view of Fig. 2).

Regarding claim **7**, Yamashita discloses an image processing method for compensating for light falloff in a digital image, the method comprising the steps of: providing a digital image comprised of image pixels (it is inherent that the CCDs (2, 3, 4) comprises a plurality of individual pixels); providing falloff compensation information which varies depending on location within the digital image (It is inherent from Fig. 2 that the falloff compensation information varies depending on location within the digital image as can be seen by the horizontal axis representing distance from the image center and the parabolic wave signal representing different compensation values that change according to how far the pixel is located from the center of the image.); using the falloff

compensation information to generate an individual compensation value for one or more of the image pixels (As can be seen from Fig. 2 depending on the distance the pixel is from the center of the image will determine the falloff compensation needed for that pixel, the same would be true if a mask were displayed instead.); determining a balance value from the falloff compensation information (col. 2, lines 47-49); and applying the individual compensation value and the balance value to one or more pixels of the digital image to provide a corrected image having compensation for light falloff with minimal change to the light balance (col. 2, lines 28-49).

Regarding claim **9**, Yamashita discloses in Fig. 1 a method for compensating for light falloff in a digital image wherein the step of applying the individual compensation value to at least one pixel value is multiplicative (multipliers 30, 31, and 32) (col. 4, lines 24-27).

Regarding claim **13**, Yamashita discloses an image processing method for compensating light falloff in a digital image, the method comprising the steps of: providing a digital image comprised of image pixels (it is inherent that the CCDs (2, 3, 4) comprises a plurality of individual pixels); providing a falloff compensation function (it is inherent from Fig. 2 that a falloff compensation function is being used to get the values that are plotted in Fig. 2); providing a parameter value (location parameter) related to the falloff compensation function that refers to the relative amount of correction applied to the image pixels (Fig. 2); using the

falloff compensation function and the parameter value (location parameter) to generate individual compensation values for one or more of the image pixels (As can be seen from Fig. 2 depending on the distance the pixel is from the center of the image will determine the falloff compensation needed for that pixel.); determining a balance value from the falloff compensation function and the parameter value (col. 2, lines 47-49); and applying the individual compensation values and the balance value to one or more image pixels of the digital image (col. 2, lines 28-49).

Regarding claim **14**, Yamashita discloses an image processing method for compensating for light falloff in a digital image, the method comprising the steps of: providing a digital image comprised of image pixels (it is inherent that the CCDs (2, 3, 4) comprises a plurality of individual pixels); providing a falloff compensation mask (It is inherent from Fig. 2 that Fig. 2 is a two-dimensional image and if Fig. 2 would be displayed as a three-dimensional image a compensation mask would be the result.); using the falloff compensation mask to generate an individual compensation value for one or more of the image pixels (As can be seen from Fig. 2 depending on the distance the pixel is from the center of the image will determine the falloff compensation needed for that pixel, the same would be true if a mask were displayed instead.); determining a balance value from the falloff compensation mask (col. 2, lines 47-49) (the compensation mask would be the three-dimensional view of Fig. 2); and

applying the individual compensation value and the balance value to one or more image pixels of the digital image (col. 2, lines 28-49).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita as applied to claim 7 above, and further in view of Enomoto (U.S. Patent 6,323,934).

Regarding claim **8**, Yamashita fails to a method for compensating for light falloff in a digital image wherein the step of applying the individual compensation value to the pixels is additive.

Referring to the Enomoto reference, Enomoto discloses a method for compensating for light falloff in a digital image wherein the step of applying the individual compensation value to the pixels may be additive or multiplicative (col. 14, lines 50-58).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the teachings of Enomoto with Yamashita in order to apply the individual compensation values to the pixels additively or multiplicatively.

5. Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita as applied to claims 1-4 above.

Regarding claims **15-18**, Yamashita differs from claims 15-18 in that Yamashita fails to disclose that the falloff compensation information is determined using a computer program. Official Notice is taken that is well known to implement a method on an image input apparatus using a computer program. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have implemented this procedure using a computer program. Therefore, grounds for rejecting claims 1-4 apply for claims 15-18 in their entireties.

Allowable Subject Matter

6. Claims 6 and 10-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: prior art fails to teach or suggest an image processing method for compensating for light falloff in a digital image, wherein...

a. ... the step of determining a balance value comprises the steps of applying the individual compensation values to one or more pixels of the input digital image to provide an intermediate corrected image and computing the balance value from the difference of the mean intensity of

the central portions of the input digital image and the corrected digital image (claim 6).

b. ...the step of determining a balance value from the falloff compensation information is accomplished by determining the average of at least two individual compensation values (claim 10).

c. ...the at least two individual compensation values correspond to adjacent and centrally located locations within the digital image (claim 11).

d. ...the balance value is determined by using an average of between 25% to 45% of the individual compensation values (claim 12).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Heather R Long whose telephone number is 703-305-0681. The examiner can normally be reached on Mon. - Thurs.: 7:00 am - 4:30 pm, and every other Fri.: 7:00 am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Christensen can be reached on (703) 308-9644. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HRL
July 15, 2004

TUAN HO
PRIMARY EXAMINER